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ANTIREFLECTION FILM AND MANUFACTURE THEREOF

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ABSTRACT:

PURPOSE: To obtain an antireflection preventing film having a large area in low cost, in a multilayer antireflection film formed by laminating a low refractive index film and a high refractive index film, by forming the low refractive index film using composite oxide containing one of Zr, Ti, Hf, Sn, Ta and In and one of Si and B as a main components.

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CONSTITUTION: In a multilayer antireflection film formed by laminating low refractive index films constituting odd-number layers counted from an air side and high refractive index films constituting even-number layers, each low refractive index film is based on composite oxide containing at least one of Zr, Ti, Hf, Sn, Ta and In and at least one of Si(silicon) and B(boron). By increasing the atomic ratio X of B to Zr from 0 to 3.7, a refractive index continuously lowers from 2.1 to 1.7. Further, in a ZrSiYOZ system, by increasing the atomic ratio of Si to Zr from 0 to 9.0, a refractive index continuously lowers from 2.1 to 1.5.

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